

## 6. Actual Market Demand, Supply and TDR Price

In Sections 4 and 5 we explored theoretical total demand for, and supply of TDRs – that is, the maximum number of additional units above base density in the receiving areas and the maximum number of TDRs that could be allocated to sending areas. While important from an overall perspective when structuring the program, these totals are not indicative of the “actual” or “market” supply and demand, which when taken together, will determine TDR price.

We indicate that total demand could be as high as 99,184 additional units at full build out, and developers, on average, would be willing to pay up to \$7,229 for the right to build these additional units. Comparing these numbers against the total supply, the market appears to be relatively balanced. That is, the maximum supply of 48,009 TDRs that could be allocated translate into 192,032 additional units considering that 1 TDR = 4 additional units under the proposed program.

Thus, in total terms, there is twice as much supply as there is demand. This ratio is desirable to ensure that enough supply exists to account for a certain number of sending site landowners who will not participate in the market. Any greater ratio would have too little demand chasing too much supply, and the currency (i.e. TDRs) would not retain its value.

However, these totals of supply and demand do not tell the full story as to how the market will function. As the previous section indicated, in any given year, we can expect that developers would only demand a maximum of approximately 1,000 additional lots, or about 1% of the total potential number.

Just as it is erroneous to assume that all the potential for additional lots would be demanded at once, it is also erroneous to assume that all the TDRs would be available at the same time. TDR markets are traditionally “thin,” meaning that at any given point in time there are only a few sending site landowners who are willing to participate in the market through a deed restriction of their property to sell TDRs.

The actual number of TDRs available for purchase by developers will depend on rural landowners’ preferences and the extent of compensation they could receive through TDR sales (i.e. the TDR market price). Let’s take a look at landowner’s potential willingness to sell TDRs to explore what the actual supply is likely to be in the market. In doing so, it is critical to assess the options these landowners have for revenue.

Table 6.1 below shows the gross revenue potential from a 640-acre parcel whereby three 160-acre lots are subdivided and sold. This would be the baseline condition under the proposed program. Relative to this baseline is the number of TDRs allocated and what they would have to sell for to yield the same revenue return. Based on various allocations depending on land value, this example shows that if landowners can sell their TDRs between \$20,000 and \$33,000 apiece (or between \$5,000 and \$8,750 per equivalent additional unit assuming 1 TDR = 4 units) they would capture

the same revenue as subdividing and selling 160-acre lots. (Note: There are no properties in the two highest value categories; this is why the table below says “none”).

**Table 6.1 Landowner Willingness to Sell TDRs**

<b>Raw Land Value Zone (\$/acre)</b>	<b>Revenue from three 160 acre Lots*</b>	<b># TDRs allocated**</b>	<b>Landowner Willingness to Sell (\$/TDR)</b>	<b>Equivalent Willingness to Sell per unit***</b>
\$1,000	\$ 480,000	24	\$ 20,000	\$ 5,000
\$1,001 - \$2,500	\$ 840,000	24	\$ 35,000	\$ 8,750
\$2,501-\$5,000	\$ 1,800,000	54	\$ 33,333	\$ 8,333
\$5,001-\$10,000	\$ 3,600,000	144	\$ 25,000	\$ 6,250
\$10,001-\$15,000	\$ 6,000,000	264	\$ 22,727	\$ 5,682
\$15,001-\$30,000	\$ 10,800,000	504	\$ 21,429	\$ 5,357
\$30,001-\$60,000	none	none	none	none
\$60,001-\$90,000	none	none	none	none

\* based on the median per acre land value

\*\* based on the acreage and value-based allocation methods

\*\*\* assumes each TDR is equivalent to 4 additional units

Note: if the divisor in the value-based allocation was 40,000 versus 20,000 the # of TDRs allocated would be half and subsequently the willingness to sell would be double.

It is useful then to compare landowner willingness to sell to developer willingness to pay. In doing so we are able to make some definitive findings about the “actual” TDR supply.

Landowners will only participate in the market with developers who are able to meet or exceed their price – that is, their willingness to sell. In Table 6.1, the lowest landowner willingness to sell is \$5,000. Recall from chart 4.2 that developer willingness to pay varied by receiving area; important to our discussion here, however, is that developers in the Bozeman donut and two situations in Four Corners (development scenario 4) and Belgrade (development scenario 3) are willing to pay above \$5,000 for an additional unit. Other development scenarios, in other areas cannot match the price at which landowners may be willing to sell TDRs. For example, developers in much of the Four Corners area will not be able to afford TDRs. This is a problem since much of the County’s growth is expected to occur in the Four Corners area.

Yet, because landowner willingness to sell (across much of the land value categories) aligns with demand to a great extent, many landowners could be willing participants in the TDR market. This means that TDR allocations, coupled with the fact that each TDR translates into 4 additional units - in theory - would act to effectively bring potential buyers and sellers together.

Therefore, we find that the program's proposed value-based "divisor" as a means of allocating TDRs and the ratio of 1 TDR equaling 4 additional units in the receiving areas, when taken together, do a good job at bringing market supply and demand into equilibrium.

Since developers will look for the lowest-priced TDRs, most transactions are likely to come from owners of the lowest-valued land – that is, the areas most distant from the receiving areas (the dark green areas on the map in Figure 3.2). Ironically then, the likely market participants are landowners with TDRs from low-value areas and developers of high-value homes in the Bozeman donut. Properties under the greatest development pressure, just outside the growth areas, will likely not participate in the TDR market because they will be unable to capture from TDR sales the full compensation they expect from a deed restriction. Instead, willing TDR sellers are likely to be owners of properties that are very distant from growth areas that would likely not develop for a long time.

However, even though the economic rationality expressed through the willingness to sell and pay are in relative accord, it does not mean all landowners who can capture \$20,000 per TDR sold will participate. We have not yet taken into consideration landowners' aversions to permanent deed restrictions which are necessary to be allocated TDRs under the proposed program nor have we considered landowners' dissatisfaction over imposed 160-acre minimum lot sizes/density.

Few landowners are likely to permanently restrict the development potential of their property to be less than 1 unit per 160 acres, even though they might be able to recoup the loss in value through TDR sales. Among other things, the landowners may believe that the County may increase their development potential in the future, even if the TDR program is put in place now. From a landowner's perspective the price of "forever" is not equivalent to the rational economics of today. For this reason development right markets are "thin" – often with few willing sellers, since most do not want to lose the opportunity to develop in the future.

Furthermore, many landowners perceive that there is a prisk in the market that they may not be able to fully recoup the value loss via sales of TDRs. Other routes to achieve economic returns, for example seeking County Commission approval of higher densities, could keep landowners from participating in the market.

For these reasons, we assume that the "actual" supply or amount of TDRs that landowners sell to developers in the market would be much less than the total supply. How much less is difficult to determine since landowner preferences are hard to gauge over an area as large as Gallatin County.

In our judgment, a reasonable assumption may be that 2,000 TDRs may be available to receiving-area developers each year ~ twice the annual number of lots built each year, and a ratio similar to what we found to be the total theoretical supply to demand ratio. Inclusive to this assumption is that landowners who contribute TDRs to the market would not deed restrict *all* of their property, but rather only some fraction, thereby retaining the right to develop some of their property in the future.

Given that demand is for approximately 1,000 improved lots, then 2,000 additional lots could be purchased from willing sending area landowners through TDRs. Since 1 TDR = 4 additional lots, this equates to 500 TDRs demanded by the market. This means that just under 1% of the total theoretical supply would be readily available for purchase by developers (i.e. 500 available TDRs is less than 1% of 48,009 TDRs that could theoretically be allocated via the value-based method).

This means that there is likely to be a buyer's market. This will result in a TDR price that is less than the developer "willingness to pay" as we reported in Section 3. More specifically, developers who are willing to pay \$10,000 for an additional unit in their subdivisions will witness a surplus when they only have to pay \$5,000.